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Lolium-fungus and smut.—In a short paper FREEMAN²⁷ points out the probability of relationship between the fungus of *Lolium temulentum* and the smuts. Partly by reason of the facts discovered by MADDOX, and later independently discovered by BREFELD and by HECKE, that the loose smut of wheat and the smut of barley can infect the young ovary directly, and that these grains, apparently normal, produce smutted plants, he is led to the belief that the *Lolium-fungus* is a smut. The behavior and appearance of the smut-mycelium in these embryos is very similar to that of the *Lolium-fungus*, and strongly suggests a relationship between that fungus and the smuts.—H. HASSELBRING.

Contributions from Gray herbarium.²⁸—In the most recent contribution of this series, ROBINSON has published some results of his studies in the Eupatorieae. There is a revision of *Piquieria*, 19 species being recognized, 4 described as new, and a new sub-genus (*Erythradenia*) established; also a revision of *Ophryosporus*, 17 species being recognized. Under the genus *Helogyne* its synonyms are discussed, and its 4 species described (one of them is new). A fourth part of the contribution gives diagnoses and synonymy of Eupatorieae and of certain other Compositae which have been classed with them, among which appear descriptions of 6 new species of *Eupatorium*.—J. M. C.

N. Am. Characeae.—ROBINSON²⁹ has published a synopsis of the North American species of Chareae, one of the two subfamilies of Characeae. Of the four genera making up this subfamily, only *Chara* has been collected in North America. Within the range assigned, 50 species are described as belonging to this genus, 16 of which are characterized as new.—J. M. C.

Assimilation of free nitrogen by fungi.—From a discussion of the results of recent work relating to the assimilation of free nitrogen by fungi, HEINZE³⁰ comes to the conclusion that elementary nitrogen is not assimilated by fungi other than bacteria. The article is useful in that it brings together all the literature relating to this subject.—H. HASSELBRING.

²⁷ FREEMAN, E. M., The affinities of the fungus of *Lolium temulentum* L. *Annales Mycol.* 4:32-34. 1906.

²⁸ ROBINSON, B. L., Studies in the Eupatorieae. Contributions from the Gray Herbarium of Harvard University. N. S. No. 32. *Proc. Amer. Acad.* 42:1-48. 1906.

²⁹ ROBINSON, C. B., The Chareae of North America. *Bull. N. Y. Bot. Gard.* 4:244-308. 1906.

³⁰ HEINZE, BERTHOLD, Sind Pilze imstande den elementaren Stickstoff der Luft zu verarbeiten und den Boden an Gesamtstickstoff anzureichern? *Annales Mycol.* 4:41-63. 1906.